

HYDRANGEA (*Hydrangea arborescens* ‘Annabelle’)
 MOCK ORANGE (*Philadelphus coronarius* ‘Aureus’)
 MOCK ORANGE (*Philadelphus x virginialis* ‘Virginal’)
 HIBISCUS (*Hibiscus syriacus* ‘Ardens’)
 WEIGELA (*Weigela florida* ‘Red Prince’)
 Gray Mold; *Botrytis* sp.

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SPECIAL LOCAL NEED (24C) FOR EXOTHERM TERMIL IN COLD STORAGE WAREHOUSES – NURSERY LOCATION A, 2000 - 2001: The objective of the trial was to obtain experimental evidence as to the effectiveness of Exotherm Termil against storage molds on nursery stock in cold storage warehouses. Similar trials were conducted at two different locations (see separate Crabapple write-up). At nursery location A, an entire 22,000 sq ft commercial cold storage warehouse was fumigated with Exotherm Termil. The trial consisted of the following plants *Hydrangea arborescens* ‘Annabelle’, *Philadelphus coronarius* ‘Aureus’, *Philadelphus x virginialis* ‘Virginal’, *Hibiscus syriacus* ‘Ardens’ and *Weigela florida* ‘Red Prince’. Plants were bundled together using twine in groups of 5 (or 10) plants. Eight bundles of each plant were placed standing up-right in the fumigated warehouse which was kept at 34-36°F. A total of 22 cans of Exotherm were ignited using a propane torch. This was accomplished by placing the material into 4 larger cans and then heating the outside wall of the can with the torch until a consistent white smoke was observed. The warehouse doors were close and locked after all cans were ignited. Another 8 bundles of each plant were placed up-right in an adjacent warehouse and sprayed with Daconil Weather Stik at 1.6 pt/100 gal water. A solution of 0.5 oz Daconil in 2 gal water was applied to the 8 bundles. Yet another 8 bundles of each plant were left untreated. During the next scheduled work day, about 2 to 3 days later, the variously treated bundles were arranged into a randomized complete block design with 4 replications. Two tagged bundles from each treatment were randomly placed horizontally onto wooden pallets in a large pile. Plants were randomly placed such that roots or stems may have been either on the outside (better airflow) or inside of the pallet. Two piles were arranged on each of 2 pallets and one pallet was placed on top of the other for continued storage. This was how nursery stock was generally stored at this nursery. Several weeks later when treatments were reapplied, the nursery stock was resorted back into their respective treatments, stood upright, treated, stored until fumigation was finished and then re-randomized back into the same design. Although bundles from each replicate were kept together, individual bundles would have ended up in different positions within their respective pile each time treatments were finished. Treatments were applied on 22 Dec 00, 6 Jan 01 and 2 Feb 01. The trial was randomized on 26 Dec 00 and again on 8 Jan 01 and 2 Feb 01. Plants were monitored for moldy growth periodically during storage. Warehouse conditions remained cool and dry during the experiment, except for the first few days. Refrigeration failed in the fumigated warehouse the day after the first fumigation where temperatures rose to 44°F during the holiday period. Occasionally, additional water was applied to trees in a fine mist to keep roots from drying out. Unfortunately, all plants were also treated with Chipco 26091 at 16 oz/100 gal water on 15 Dec 00 just prior to the start of the experiment. The number of Hydrangea plants and stems (out of 10) showing *Botrytis* sporulation was determined on 2 Feb 01.

Although most plants were clean and dry at the start of the experiment, Hydrangea bundles had lots of old leaves and stem wounds. There was some *Botrytis* sporulation on these leaves at the start of the experiment but none was observed on stems. A few stem lesions were observed on Hydrangea by 18 Jan 01. Other plants in the experiment did not show any significant sporulation or stem lesions by mid-March when plants needed to be shipped to market. The number of nontreated Hydrangea plants infected with *Botrytis* was not significantly different from the number of infected plants treated with Exotherm Termil or Daconil Weather Stik. Also, the average number of infected stems on nontreated plants was not significantly different from the number of infected stems on plants treated with Exotherm Termil or Daconil Weather Stik. Although these data do not support the use of Exotherm Termil, additional trials would need to be conducted before reaching any firm conclusions. The data could be explained by the uniform treatment with Chipco just prior to the start of the experiment. Also, only the Exotherm Termil treated plants were in a warehouse where refrigeration failed during the experimental period.

Treatment	Gray Mold* (Hydrangea plants only)	
	Plants Infected (%)	Average Number of Stems Infected/10 plants
Nontreated	88	35.8
Exotherm Termil	100	47.8
Daconil Weather Stik at 1.6 pt/100 gal water...	83	24.0

* Means were not differ significantly based on Fisher’s protected LSD (P=0.05).

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